

**50 CFR Part 17****Endangered and Threatened Wildlife and Plants; Proposal To Determine *Trillium Reliquum* (Relict *Trillium*) To Be an Endangered Species****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Proposed rule.

**SUMMARY:** The Service proposes to list *Trillium reliquum* Freeman (relict trillium) as an endangered species under authority of the Endangered Species Act of 1973 (Act), as amended. *Trillium reliquum* is known from only nine locations—Alabama (two sites), Georgia (four sites), and South Carolina (three sites). The species is endangered by timber harvesting, wildfires, and development of its habitat. This proposal, if made final, would implement the Federal protection provided by the Act for *Trillium reliquum*. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by March 18, 1987. Public hearing requests must be received by March 2, 1987.

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the Field Supervisor, Asheville Endangered Species Field Office, U.S. Fish and Wildlife Service, Room 224, 100 Otis Street, Asheville, North Carolina 28801. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Mr. Robert R. Currie at the above address (telephone 704/259-0321 or FTS 672-0321).

**SUPPLEMENTARY INFORMATION:****Background**

*Trillium reliquum*, a herbaceous member of the lily family, was recognized as a distinct species by

Freeman (1975) after his extensive study of this complex, taxonomically difficult group. During his research, Freeman examined more than 10,000 *Trillium* specimens from over 80 herbaria and extensively collected and observed members of the group in the field. This rare species is distinguished from other sessile-flowered *Trillium* by its decumbent or S-curved stems, distinctively shaped anthers, and the color and shape of its leaves. The flowers appear in early spring and are greenish to brownish purple or occasionally pure yellow in color. The fruit is an oval-shaped, berry-like capsule which matures in early summer. *Trillium reliquum* is perennial from a tuberous rhizome, and like other members of the genus, it dies back to this rhizome after the fruit matures (Freeman 1975, Freeman 1985).

*Trillium reliquum* is found only in moist hardwood forests which have had little or no disturbance in the recent past. The soils on which it grows vary from rocky clays to alluvial sands, but all exhibit a high organic matter content in the upper soil layer. All sites appear to be free from the influence of fire, both in the recent and distant past. Timber harvesting at the known sites has been limited to selective cutting (Freeman 1985).

There are currently nine known populations of *Trillium reliquum*. Alabama has two populations, Georgia has four populations, and South Carolina has three populations. The following discussion of the status of each State's populations is extracted from a status report on the species prepared by Freeman (1985).

Site 1, Henry County, Alabama. This small population (approximately 150 plants, on one-third acre) is on land managed as a recreation area by the U.S. Army Corps of Engineers. Roads constructed in the area, as well as an existing power transmission line, have altered the area and may have destroyed habitat occupied by *Trillium reliquum*. At the present time, illegal trash and refuse dumping and digging for fish bait are potential threats to the species at this location.

Site 2, Lee County, Alabama. This is the second largest known population of the species. Several thousand plants are distributed over a 120-acre area. This

site is privately owned and is near an expanding urban population, and the major threat to the site is expansion of an adjacent residential subdivision. The site is currently for sale and could, in the near future, be lost to intensive residential development or conversion to intensive pine monoculture.

Site 3, Clay County, Georgia. This moderate-sized population occurs along a small creek which is a tributary of the Chattahoochee River. The plants occur within a small (3-acre) area bounded by development on three sides and unsuitable habitat on the fourth side. The site is privately owned and is threatened by timber harvesting and/or residential development.

Site 4, Columbia County, Georgia. This moderate-sized population occurs on approximately 15 acres within a privately owned tract in the vicinity of an expanding urban area. Historically, part of this population was destroyed by a quarrying operation. Current threats to the site include residential development and timber harvesting.

Site 5, Columbia County, Georgia. This very small population (less than 50 plants) occurs on unprotected, privately owned land. Recent residential development and timber harvesting have altered many areas adjacent to the site. Potential threats to this population include development, logging, and wildfires.

Site 6, Early County, Georgia. This small population was adversely impacted by a tornado which struck the area in 1983. The only plants observed in 1985 were near the edge of the impacted area. The mature hardwood forest, which formerly occurred at this site, has been completely destroyed and replaced with a thick tangle of broken tree trunks and limbs, intertwined with greenbrier, blackberry, and grape vines.

Site 7, Aiken and Edgefield Counties, South Carolina. This is the largest known population of *Trillium reliquum*. A portion of the site has been purchased as a nature preserve by the South Carolina Department of Marine Resources. An additional small portion of the population is within a highway right-of-way owned by the South Carolina Department of Transportation. The remainder of the area is in private ownership and is threatened by

residential development resulting from the expansion of an adjacent urban area. A portion of the best habitat which occurred at this location was apparently destroyed by activities associated with highway construction. A small portion of the site is currently being adversely impacted by grazing cattle. In the spring of 1986, several hundred plants were cut while in bloom by vandals or uninformed wildflower enthusiasts (Roger Jones, The Nature Conservancy, personal communication, 1986).

Site 8, Aiken County, South Carolina. This small (10-acre) population is in a rich, vegetatively diverse ravine adjacent to the Savannah River. A portion of the site is municipally owned while the remainder is in private ownership. Threats to the site include wildfires, trampling by visitors to the area, timber harvesting, and development.

Site 9, Aiken County, South Carolina. This healthy population occurs along the lower slope of a bluff which parallels the Savannah River. It is the third largest of the known *Trillium reliquum* sites, is privately owned, and currently receives no protection. Threats to this location include wildfires, logging, development, and livestock grazing.

Additional appropriate sites were searched for the presence of *Trillium reliquum* during the 1984 and 1985 field seasons (Freeman 1985). Habitat characteristics such as slope, soils, vegetation, and topography were used to indicate suitable habitat. Including the known sites, Freeman (1985) searched a total of 44 locations for presence and distribution of *Trillium reliquum*. Upon completion of the status survey, the Service provided copies to the appropriate State agencies for review and comment. Rayner (1985) responded that one additional area (the Oconee River drainage) may support the species and suggested that an attempt be made to determine if, in fact, the species occurs in that area. R. Curie and R. Ingram (Currie 1986) searched seven areas in Baldwin County, Georgia, during the spring of 1986. The related species, *Trillium maculatum* and/or *Trillium cuneatum*, were found at most of these sites, but no additional populations of *Trillium reliquum* were found. The areas searched were those which, based upon soils, slope, vegetation, and topography, appeared to be most likely to support *Trillium reliquum*.

Federal government actions on this species began with the November 28, 1983, publication of a supplement to the Notice of Review of Native Plants in the *Federal Register* (48 FR 53640). *Trillium reliquum* was included in this

supplement as a category-2 species. Category-2 species are those for which listing as endangered or threatened species may be warranted, but for which substantial data on biological vulnerability and threats are not currently known or on file to support proposed rules. Subsequent to this notice, the Service funded a status survey of the species. Field work for this survey was conducted during the 1984 and 1985 field seasons and the Service accepted the final report (Freeman 1985) in late September 1985. This status report and other available information indicated that the addition of *Trillium reliquum* to the Federal list of Endangered and Threatened Plants is warranted.

All plants included in the comprehensive plant notices are treated as under petition. Section 4(b)(3)(B) of the Endangered Species Act, as amended in 1982, requires the Secretary to make certain findings on pending petitions within 12 months of their receipt. On October 12, 1984, October 11, 1985, and October 10, 1986, the Service found that listing *Trillium reliquum* may be warranted but was precluded by other higher priority listing actions. Publication of this proposal constitutes the next one-year finding that is required.

#### Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to *Trillium reliquum* Freeman (relict trillium) are as follows:

##### A. The Present or Threatened Destruction, Modification, or Curtailment of its Habitat or Range

All of the known *Trillium reliquum* populations are currently threatened by one or more human activities (Freeman 1985). The most significant of these threats is the loss or alteration of this trillium's habitat resulting from residential development. Most populations are adjacent to rapidly expanding urban areas, and the direct impacts of construction activities associated with an expanding population are significant. In addition to these direct impacts, activities such as power transmission line construction, gas pipeline installation, and road

construction all may have indirect or direct impacts on this rare species if not planned in a way to protect it. Logging of areas occupied by the species constitutes a significant threat, as does conversion or use of the sites for pine monoculture, pastures, or row crop agriculture. Historically, quarrying of stone has adversely affected one population; and stone, sand, and clay quarrying remains a potential threat to at least portions of the known populations. Fires, whether caused by arson or accident, or for timber management, threaten all populations. All populations have been impacted to some extent by one or more of these activities and all populations, at least in part, remain vulnerable to them (Freeman 1985).

##### B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

*Trillium reliquum* is not currently a significant component of the commercial trade in native plants; however, the species has potential for horticultural use, and publicity of the species could generate an increased demand.

##### C. Disease or Predation

A portion of the *Trillium reliquum* population at Site 7 is currently being adversely impacted by cattle which are being permitted to graze within the wooded areas supporting the species. This activity is a potential threat to most of the known populations. No other threats related to disease or predation are currently known.

##### D. The Inadequacy of Existing Regulatory Mechanisms

In Alabama, *Trillium reliquum* is informally listed as an endangered species (Freeman *et al.* 1979, Freeman 1979). However, the species has no legal status or protection in that State. *Trillium reliquum* is not included in Georgia's Protected Plants (McCollum and Ettman 1977) and therefore does not receive any legal protection in the State. This list has only been revised once since it was originally published, and it is anticipated that relict trillium will be added to the Georgia list as an endangered plant in a future revision of the Protected Plant List (Chuck Rabolli, Georgia Department of Natural Resources, personal communication, 1986). South Carolina informally lists *Trillium reliquum* as an endangered species (D. Rayner, South Carolina Department of Wildlife and Marine Resources, personal communication, 1986). Although South Carolina does not have an official plant protection

program, the State is pursuing protection of this rare species through its natural areas acquisition program. The only population protected from taking is the one in that portion of Site 7 which has been purchased by South Carolina as a natural area. Plants can only be collected from a State-owned natural area by permit from the appropriate State agency. This prohibition is difficult to effectively enforce and the plants there, as at all of the other known sites, remain vulnerable to taking by hobbyists, collectors, and vandals.

#### *E. Other Natural or Manmade Factors Affecting its Continued Existence.*

*Trillium reliquum* is a species which currently exists in two very small groups of populations—one located along the Georgia-Alabama State line and the other along the Georgia-South Carolina State line. Whether these represent remnant populations of a species which was once much more widely distributed or a species which has always been rare is impossible to determine, based upon the information currently available. In addition to the factors discussed in A-D above, the remaining populations appear to be threatened by an additional human-related factor which appears to be adversely affecting the native flora throughout the Southeast. The woody vine, *Lonicera japonica* (Japanese honeysuckle), is an aggressive, weedy species which was introduced into this country. This species appears, in some areas, to be replacing the native flora. Freeman (1985) notes that this species may represent a serious threat to *Trillium reliquum*.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Trillium reliquum* as an endangered species. Endangered status seems appropriate because of the severity of the threats facing the species throughout its range. Critical habitat is not being designated for the reasons discussed below.

#### **Critical Habitat**

Section 4(a)(3) of the Act, as amended, requires that to the maximum extent prudent and determinable, the Secretary designate any habitat of a species which is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for *Trillium reliquum* at this time. The species has potential for horticultural use. Increased publicity

and the provision of specific location information associated with critical habitat designation could result in taking pressures on the species. Publication of critical habitat descriptions would make *Trillium reliquum* more vulnerable to taking, since most of the known populations are on privately owned land. Many of the populations consist of only a small number of individuals, and the loss of even a few could jeopardize the species. The landowners involved in managing the habitat of the relict trillium have been informed of the locations of this species and of the importance of protecting it. Protection of this species' habitat will be addressed throughout the recovery process and through the section 7 jeopardy standard. Therefore, it would not be prudent to determine critical habitat for *Trillium reliquum* at this time.

#### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 (see revision at 51 FR 19926; June 3, 1986). Section 7(a)(4) requires Federal agencies to confer informally with the Service on any action that is likely to jeopardize the continued existence of a proposed species or result in the destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may

affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. Eight of the nine known populations of *Trillium reliquum* are on privately or State-owned lands. One small population is located on a federally owned recreation area managed by the U.S. Army Corps of Engineers. There are no known current or planned Federal activities which may affect any of these populations.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export an endangered plant, transport it in interstate or foreign commerce in the course of a commercial activity, sell or offer it for sale in interstate or foreign commerce, or remove it from areas under Federal jurisdiction and reduce it to possession. Certain exceptions can apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued since *Trillium reliquum* is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, 6th Floor, Broyhill Building, U.S. Fish and Wildlife Service, Washington, DC 20240 (703/235-1903).

#### **Public Comments Solicited**

The Service intends that any final rule resulting from this proposal will be as accurate and as effective as possible. Therefore, any comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning any aspect of this proposed rule are hereby solicited. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Trillium reliquum*;

(2) The location of any additional populations of *Trillium reliquum* and the reasons why any habitat should or should not be determined to be critical

habitat as provided by section 4 of the Act;

(3) Additional information concerning the range and distribution of this species; and

(4) Current or planned activities in the subject area and their possible impacts on *Trillium reliquum*.

Final promulgation of the regulation on *Trillium reliquum* will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of a final regulation that differs from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Field Supervisor, Asheville Endangered Species Field Office (see the "Addresses" section).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination

was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### Literature Cited

- Currie, R.R. 1986. Memorandum to files reporting results of additional field searches for *Trillium reliquum*. U.S. Fish and Wildlife Service, Asheville Field Office, Asheville, North Carolina.
- Freeman, J.D. 1975. Revision of *Trillium* Subgenus *Phyllantherum* (Liliaceae). *Brittonia* 27:1-62.
- Freeman, J.D. 1979. Endangered, threatened, and special concern plants of Alabama. Auburn Univ. Agr. Exp. Sta., Botany and Microbiology Department Ser. #3, 24 pp., illus.
- Freeman, J.D. 1985. Status Report on *Trillium reliquum*. Unpublished report to the U.S. Fish and Wildlife Service, Southeast Regional Office, Atlanta, Georgia, 36 pp.
- Freeman, J.D., A.S. Causey, J.W. Short, and R.R. Haynes. 1979. Endangered, threatened, and special concern plants of Alabama. *J. Alabama Acad. Sci.* 50:1-26.
- McCollum, J.L., and D.R. Ettman. 1977. Georgia's Protected Plants. Georgia Department of Natural Resources and USDA-SCS, Atlanta, Georgia, 64 pp.
- Rayner, D.A. 1985. Letter from South Carolina Wildlife and Marine Resources Department to Mr. Warren Parker, Field Supervisor, Asheville Endangered Species Field Office, on the status of *Trillium reliquum*.

#### Author

The primary author of this proposed rule is Mr. Robert R. Currie, Endangered

Species Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, Room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 672-0321).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

#### Proposed Regulation Promulgation

#### PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.12(h) by adding the following, in alphabetical order under the family Liliaceae, to the list of Endangered and Threatened Plants:

#### § 17.12 Endangered and threatened plants.

\* \* \* \* \*

(h) \* \* \*

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Liliaceae—Lily family:	*	*	*	*		
<i>Trillium reliquum</i> .....	Relict trillium.....	U.S.A. (AL, GA, SC).....	E	.....	NA	NA
	*	*	*	*		

Dated: November 28, 1986.

P. Daniel Smith,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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